

**Tutor:** Qiuxia Lin

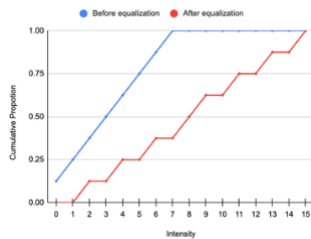
[qiuxia@comp.nus.edu.sg](mailto:qiuxia@comp.nus.edu.sg)

**A1:**

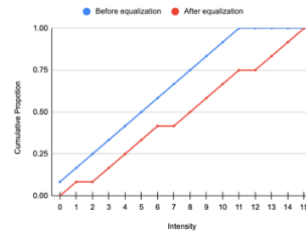
Refer to this [google sheet](#) to see the exact equation on how to do equalization mapping.

Original Intensity	Intensity after histogram equalization				
	(a)	(b)	(c)	(d)	(e)
0	2	1	0	0	0
1	4	3	1	2	1
2	6	4	3	3	2
3	8	5	4	4	4
4	9	6	8	6	4
5	11	8	10	7	6
6	13	9	12	8	6
7	15	10	15	9	8
8	15	11	15	11	9
9	15	13	15	14	10
10	15	14	15	14	11
11	15	15	15	15	12
12	15	15	15	15	13
13	15	15	15	15	13
14	15	15	15	15	14
15	15	15	15	15	15

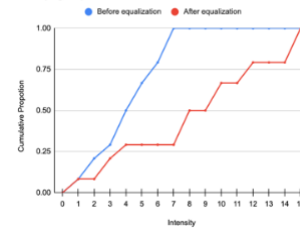
CDF



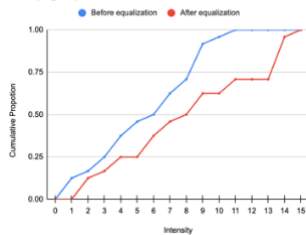
CDF(Fig1.b)



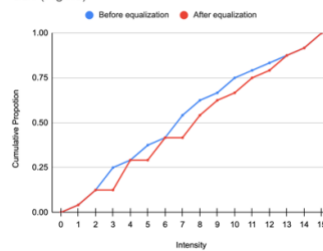
CDF(Fig1.c)



CDF(Fig1.d)



CDF(Fig1.e)



**A2:**

Pixel position	Output pixel intensity		
	cross-correlation	convolution	median filtering
(0,0)	152	149	0
(2,2)	135	120	4
(4,3)	204	220	3

**Coding:** see `CS4243-Tutorial-01-Solution.ipynb`